

1 **Amendment to the Claims**

2 **In the Claims:**

3 Please amend Claims 1, 4, 12, 14, 19, 23, and 31 as follows:

4 1. (Currently Amended) A method for enabling a user to create or modify a design for an  
5 aircraft and evaluate flight characteristics of the design, comprising the steps of:

6 (a) enabling the user to input a plurality of parameters that define the design of the  
7 aircraft;

8 (b) processing the plurality of parameters to generate a plurality of aerodynamic  
9 coefficients that define a flight model for the design of the aircraft;

10 (c) producing a plurality of flight model data files that include:

11 (i) the aerodynamic coefficients generated; and

12 (ii) selected parameters input by the user; and

13 (d) enabling the user to evaluate the flight characteristics of the design by  
14 interactive, simulated flying of the aircraft within a flight simulation program using the plurality of  
15 flight model data files, wherein said interactive, simulated flying of the aircraft enables the user's  
16 evaluation to be substantially based on a point of view of a pilot flying the aircraft.

17 2. (Original) The method of Claim 1, wherein the plurality of parameters include geometric  
18 properties of the aircraft, and wherein the step of processing comprises the step of using the  
19 geometric properties to determine a force developed by each of a plurality of component surfaces of  
20 the aircraft.

21 3. (Original) The method of Claim 1, wherein the step of enabling the user to input the  
22 plurality of parameters comprises the steps of:

23 (a) associating allowed limits for at least some of the plurality of parameters; and

24 (b) providing an indication if the user enters a parameter that is outside the  
25 allowed limits associated with said parameter.  
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27 4. (Currently Amended) The method of ~~Claim 4~~ Claim 3, further comprising the step of  
28 excluding entry of any parameter that is outside the allowed limits associated with said parameter.

29 5. (Original) The method of Claim 1, further comprising the steps of:  
30

1 (a) enabling the user to modify at least one of a plurality of parameters of an  
2 existing design for an aircraft; and

3 (b) repeating steps (b) through (d) in Claim 1 in regard to the design of the existing  
4 aircraft as thus modified by the user, to enable the user to evaluate flight characteristics of the design  
5 of the existing aircraft as thus modified by the user.

6 6. (Original) The method of Claim 1, further comprising the step of modifying the flight  
7 model data files that were generated, based upon empirical data determined from use of the flight  
8 simulation program, to increase an accuracy of the flight characteristics experienced when simulating  
9 flying of the aircraft in the flight simulation program.

10 7. (Original) The method of Claim 1, wherein the step of producing the flight model data files  
11 includes the step of producing one flight model data file that includes binary data defining the aerodynamic  
12 coefficients for a plurality of component surfaces of the aircraft.

13 8. (Original) The method of Claim 1, wherein the step of producing the flight model data  
14 files includes the step of producing one flight model data file that includes at least some of the  
15 plurality of parameters input by the user that do not directly affect the flight characteristics of the  
16 aircraft.

17 9. (Original) The method of Claim 8, wherein said one flight model data file defines at least  
18 one of:

19 (a) an instrument panel configuration for the aircraft; and

20 (b) a plurality of sounds experienced when simulating flying of the aircraft.

21 10. (Original) The method of Claim 1, wherein the step of processing the plurality of  
22 parameters comprises the steps of:

23 (a) determining an order in which the aerodynamic coefficients for specific  
24 component surfaces of the aircraft are generated; and

25 (b) generating the aerodynamic coefficients for the component surfaces in the  
26 order determined.

27 11. (Original) A memory medium on which are stored machine instructions for carrying out  
28 the steps of Claim 1.

1           12. (Currently Amended) A method for enabling a user to create or modify a design for an  
2 aircraft and evaluate flight characteristics of the design as created or modified by the user, comprising  
3 the steps of:

4                   (a)     enabling the user to input a plurality of parameters that define the design of the  
5 aircraft;

6                   (b)     processing the plurality of parameters to generate a plurality of aerodynamic  
7 coefficients in a predefined sequence, said predefined sequence being selected to ensure that any  
8 aerodynamic coefficients required to generate other aerodynamic coefficients of component surfaces  
9 are generated first, said aerodynamic coefficients being generated to define a flight model for the  
10 design of the aircraft;

11                  (c)     producing flight model data in a format that is compatible with a selected flight  
12 simulation program; and

13                  (d)     enabling the user to evaluate the flight characteristics of the design by  
14 interactively simulating flying of the aircraft using the selected flight simulation program, said flight  
15 simulation program using the flight model data, wherein said interactively, simulated flying of the  
16 aircraft enables the user's evaluation to be substantially based on a point of view of a pilot flying the  
17 aircraft.

18           13. (Original) The method of Claim 12, wherein the step of producing the flight model data  
19 comprises the step of producing a binary flight model data file that includes the aerodynamic  
20 coefficients for the aircraft and an environmental flight model data file that includes at least one of:

21                   (a)     a control panel configuration; and

22                   (b)     a set of sounds experienced by the user while simulating flying of the aircraft  
23 with the flight simulation program.

24           14. (Currently Amended) The method of Claim 12, further comprising the steps of:

25                   (a)     enabling the user to modify a plurality of parameters for an existing aircraft  
26 design; and

27                   (b)     carrying out steps (b) through (d) in Claim 12 for the existing aircraft design as  
28 thus modified.  
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30           15. (Original) The method of Claim 12, further comprising the steps of:

- 1 (a) associating allowed limits for at least some of the plurality of parameters; and  
2 (b) excluding entry of any parameter that is outside the allowed limits associated  
3 with said parameter.

4 16. (Original) The method of Claim 12, further comprising the step of modifying the flight  
5 model data that was generated, based upon empirical data determined from use of the flight  
6 simulation program, to increase an accuracy of the flight characteristics experienced when simulating  
7 flying of the aircraft in the flight simulation program.

8 17. (Original) The method of Claim 12, wherein an aerodynamic coefficient for aircraft lift curve  
9 slope is generated before an aerodynamic coefficient for static longitudinal stability.

10 18. (Original) A memory medium on which are stored machine instructions for carrying out  
11 the steps of Claim 12.

12 19. (Currently Amended) A system for enabling a user to create or modify a design for an  
13 aircraft and evaluate flight characteristics of the design, comprising:

14 (a) a memory in which are stored machine instructions that define a plurality of  
15 functions;

16 (b) a display;

17 (c) a user input device for input of data, commands, and for controlling the  
18 aircraft; and

19 (d) a processor that is coupled to the memory, the display, and the user input  
20 device, said processor executing the machine instructions to carry out the plurality of functions,  
21 including:

22 (i) enabling the user to input a plurality of parameters that define the  
23 design of the aircraft through the input device;

24 (ii) processing the plurality of parameters to generate a plurality of aerodynamic  
25 coefficients that define a flight model for the design of the aircraft;

26 (iii) producing a plurality of flight model data files that include the aerodynamic  
27 coefficients generated and selected parameters input by the user; and

28 (iv) enabling a user to evaluate the flight characteristics of the design by  
29 simulating flying of the aircraft interactively in response to graphic images on the display, responsive  
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1 to controls and commands provided by the user with the input device, wherein the flight  
2 characteristics of the design ~~are during~~ simulated during flying are based upon the plurality of flight  
3 model data files.

4 20. (Original) The system of Claim 19, wherein the plurality of parameters include  
5 geometric properties of the aircraft, and wherein the processor uses the geometric properties to  
6 determine a force developed by each of a plurality of component surfaces of the aircraft.

7 21. (Original) The system of Claim 19, wherein the machine instructions cause the processor  
8 to:

- 9 (a) associate allowed limits for at least some of the plurality of parameters; and  
10 (b) provide an indication if a user enters a parameter that is outside the allowed  
11 limits associated with said parameter.  
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13 22. (Original) The system of Claim 21, wherein the machine instructions cause the processor  
14 to refuse entry of any parameter that is outside the allowed limits associated with said parameter.

15 23. (Currently Amended) The system of Claim 19, wherein the machine instructions further  
16 cause the processor to:

- 17 (a) enable a user to modify at least one of a plurality of parameters of an existing  
18 design for an aircraft; and  
19 (b) repeat steps (b) through (d) in Claim 19 in regard to the design of the existing  
20 aircraft as thus modified by the user, to enable the user to evaluate flight characteristics of the design  
21 of the existing aircraft as thus modified by the user.

22 24. (Original) The system of Claim 19, wherein the machine instructions further cause the  
23 processor to modify the flight model data files that were generated, based upon empirical data  
24 determined for flight simulation, to increase an accuracy of the flight characteristics experienced  
25 when simulating flying of the aircraft.

26 25. (Original) The system of Claim 19, wherein the machine instructions cause the processor  
27 to produce one flight model data file that includes binary data defining the aerodynamic coefficients  
28 for a plurality of component surfaces of the aircraft.  
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1           26. (Original) The system of Claim 19, wherein the machine instructions cause the processor to  
2 produce one flight model data file that includes at least some of the plurality of parameters input by a user  
3 that do not directly affect the flight characteristics of the aircraft.

4           27. (Original) The system of Claim 26, wherein said one flight model data file defines at  
5 least one of:

- 6                   (a) an instrument panel configuration for the aircraft; and
- 7                   (b) a plurality of sounds experienced when simulating flying of the aircraft.

8           28. (Original) The system of Claim 19, wherein the machine instructions cause the processor  
9 to:

- 10                   (a) determine an order in which the aerodynamic coefficients for specific  
11 component surfaces of the aircraft are generated; and
- 12                   (b) generate the aerodynamic coefficients for the component surfaces in the order  
13 thus determined.

14           29. (Original) A system for enabling a user to create or modify a design for an aircraft and  
15 evaluate flight characteristics of the design, comprising:

- 16                   (a) a memory in which are stored machine instructions that define a plurality of  
17 functions;
- 18                   (b) a display;
- 19                   (c) a user input device for input of data, commands, and for controlling the  
20 aircraft; and
- 21                   (d) a processor that is coupled to the memory, the display, and the user input  
22 device, said processor executing the machine instructions to carry out the plurality of functions,  
23 including:
  - 24                           (i) enabling the user to input a plurality of parameters with the user input  
25 device, to define the design of the aircraft;
  - 26                           (ii) processing the plurality of parameters to generate a plurality of  
27 aerodynamic coefficients in a predefined sequence, said predefined sequence being selected to ensure  
28 that any aerodynamic coefficients required to generate other aerodynamic coefficients of component  
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1 surfaces are generated first, said aerodynamic coefficients being generated to define a flight model  
2 for the design of the aircraft;

3 (iii) producing flight model data; and  
4 (iv) enabling the user to evaluate the flight characteristics of the design by  
5 simulating flying of the aircraft interactively in response to graphic images on the display and  
6 controls and commands provided with the input device, using the flight model data.

7 30. (Original) The system of Claim 29, wherein the machine instructions cause the processor  
8 to produce a binary flight model data file that includes the aerodynamic coefficients for the aircraft  
9 and an environmental flight model data file that includes at least one of:

- 10 (a) a control panel configuration; and  
11 (b) a set of sounds experienced by the user while simulating flying of the aircraft.

12 31. (Currently Amended) The system of Claim 29, wherein the machine instructions further  
13 cause the processor to:

- 14 (a) enable a user to modify a plurality of parameters for an existing aircraft design;  
15 and  
16 (b) carry out steps (b) through (d) in Claim 29 for the existing aircraft design as  
17 thus modified.

18 32. (Original) The system of Claim 29, wherein the machine instructions further cause the  
19 processor to:

- 20 (a) associate allowed limits with at least some of the plurality of parameters; and  
21 (b) exclude entry of any parameter that is outside the allowed limits associated  
22 with said parameter.

23 33. (Original) The system of Claim 29, wherein the machine instructions further cause the  
24 processor to modify the flight model data that was generated, based upon empirical data determined  
25 from other simulated flying, to increase an accuracy of the flight characteristics experienced when  
26 simulating flying of the aircraft.

27 34. (Original) The system of Claim 29, wherein an aerodynamic coefficient for aircraft lift  
28 curve slope is generated before an aerodynamic coefficient for static longitudinal stability.  
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